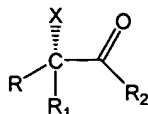
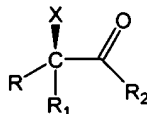


ABSTRACT

5 A process for the catalytic asymmetric synthesis of an optically active compound of the formula (1a) or (1b)



(1a)

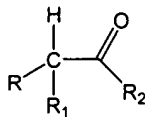


(1b)

wherein R is an organic group; X is halogen; R₁ and R₂ which may be the same or different represents H, or an organic group or R₁ and R₂ may be bridged together forming part of a ring system; R and R₂ may be bridged together forming part of a ring system; with the proviso that R and R₁ are different and R₂, when different from H, is attached through a carbon-carbon bond,

comprising the step of reacting a compound of the formula (2)

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(2)

with a halogenation agent in the presence of a catalytic amount of a chiral nitrogen containing organic compound.